

KISS, Jozsef, dr.

On cervical pregnancy. *Magy.noorv.lap.* 21 no.1:24-31 Ja '60.

1. A XX. ker. Szulo- es Nőbetegkorhaz kozlemenye (Igazgato-  
foorvos: Kiss Jozsef, dr.

(PREGNANCY ECTOPIC case reports)

NAGY, Andor, dr.; KISS, Jozsef, dr.

Activity of oncological dispensaries in the prevention of cancer and outpatient services for cancer patients. Nepegezssegugy 42 no.10: 301-304 0 '61.

1. Koslemany as Orszagos Onkologiai Intezetbol (izsgato: Viktor Janos dr.).

(NEOPLASMS hosp & clin)

(HOSPITAL OUTPATIENT SERVICES)

KISS, Jozsef, dr.; MAYLATH, Jozsefne okl. vegyes

Early diagnosis of arteriosclerosis and allied disorders with the aid of an index. Orv.hetl. 102 no.31:1454-1456 30 J1 '61.

1. Budapesti Janos Korhas, III. Belosztaly.

(ARTERIOSCLEROSIS diag)

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TITLE: Effect of elastase on the lipid metabolism of arteriosclerotic patients

SOURCE: Academia scientiarum hungaricae. Acta physiologica, v. 27, no. 2, 1965, 179-185

TOPIC TAGS: circulatory system disease, blood pressure, ketone, biologic metabolism, drug treatment

ABSTRACT: Thirty patients with severe arteriosclerosis and hypertension were given 3 x 1 and 3 x 2 elastase pills daily for 6 weeks, in order to determine whether lipid metabolism can be influenced with elastase. The results revealed an average drop of 17 per cent in the level of cholesterol. The number of ketone bodies increased by an average of 14 per cent, that is, they became normalized. The arteriosclerotic index (cholesterol mg per cent/ ketone bodies mg per cent) which was elevated before the treatment, was nearly normal following it. As a result of the treatment, a 36 per cent increase was observed in the elastase inhibitor values. On the basis of the experimental results it is assumed that elastase does play a role in lipid metabolism. Orig. art. has: 4 figures and 5 tables. [JPRS]

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• Absorption spectra of diastereoisomeric alkaloid mine derivatives. Preliminary communication Jiaqi Kim and Lianliang Long. *Acta Chim. Sinica*, (Chin. ed.) 3, 205 (1980) (in English). di-Ephedrine had absorption max. at 251, 254, and 263 mμ; di- $\beta$ -ephedrine 251, 254, and 265; N-benzoyl-di-ephedrine, N-benzoyl- $\beta$ -ephedrine, N-benzoyl-di-norephedrine, N-benzoyl- $\beta$ -norephedrine, N-benzoyl- $\beta$ -acetyl-di-norephedrine and N-benzoyl- $\beta$ -acetyl-di-nor- $\beta$ -ephedrine showed varying branches; N-acetyl-1,4-dithoxy-di-norephedrine at 261 and 267; N-acetyl-3,4-dithoxy-di-nor- $\beta$ -ephedrine at 261 and 267; N- $\beta$ -acetyl-3,4-dithoxy-di-norephedrine at 261 and 264; N- $\beta$ -acetyl-3,4-dithoxy-di-nor- $\beta$ -ephedrine at 261 and 263; N-acetylphenylethanolamine at 251, 254, and 265; N-acetylphenyl- $\beta$ -ethanolamine at 252, 254, and 265; whereas N-benzoylphenylethanolamine and N-benzoylphenyl- $\beta$ -ethanolamine showed varying branches.

**Configurations of allylic amino alcohols.** G. Feder and J. Kise (Univ. Sargod, Hong.). *Nature* 164, 917-18 (1949).—Investigations of the acyl migration reaction  $N \rightarrow O$  (cf. C. I. 43, 4239) were extended to diastereoisomeric allylic amino alcs. to establish stereo positions. When 2-benzamido- $\gamma$ -cyclohexanols in 180° and 174° were treated separately with alc. HCl at room temp., the 180° material rearranged more rapidly (by a factor of 10 or 20) and was considered to be cis; it gave  $\beta$ -benzyl-2-amino- $\gamma$ -cyclohexanol-HCl, m. 224°, also thought to be cis. The 174° material, considered to be trans, gave  $\beta$ -benzyl-2-amino- $\gamma$ -cyclohexanol-HCl (trans), m. 281°. Both HCl salts were rearranged to the original amides by alkali. At 180° the rates of rearrangement of the 2 amides were more nearly alike, but the same products as before were obtained. The studies are to be extended to the amino lactams. H. H. Voss.

Organic Chemistry - 10

The synthesis of *α*-methyl-3,4-dihydroxyphenylacetic acid (I) (Foster and J. Am. Chem. Soc., 1934, 56, 1111) is described. The previously unknown tautomers of *α*-methyl-3,4-dihydroxyphenylacetic acid (I) (same configuration as epinephrine) was prepared by the Hartung amino acid synthesis. The treatment with alkali, I decarboxylated easily. Reactions, such as an ester of guinea pig kidney, also partly decarboxylated I, proving that its behavior differs from that of the tautomers of the isomeric pseudophenylethyl acids.  $2,4,6\text{-}(\text{HO})_3\text{C}_6\text{H}_2\text{CH}_2\text{CH}_2\text{CO}_2\text{H}$  (II), b.p.  $110-20^\circ$ , was obtained by introducing  $\text{H}_2$  gas into 25 g pyruvate in 50 g 10% methylamine at  $35-40^\circ$  and cooling with ice until the mixture in it was 20 g, heating on a steam bath 40 min, pouring with stirring into 50 g.  $\text{NaOH}$  in 200 ml. water, etc. the only suspension with  $\text{NaOH}$  in ether, drying the solvent in fused  $\text{Na}_2\text{SO}_4$ , and distilling in vacuo. *β*-*α*-methyl-3,4-dihydroxyphenylacetic acid (III) was prepared by adding 10 g 20% ether solution of  $\text{HCl}$  to 25 g. II in 100 ml. dry ether, then, slowly at  $0^\circ$ , 1 g. freshly dist.  $\text{NaOH}$  in 25 ml. abs. ether, keeping overnight in a refrigerator, and

removing the solvent at  $30^\circ$ . *β*-*α*-methyl-3,4-dihydroxyphenylacetic acid (IV), m.p.  $112-20^\circ$  (decolor.), was obtained by hydrogenating 20 g. III in 120 ml. abs.  $\text{EtOH}$  over  $\text{Pd/C}$  catalyst in the usual manner 12 hrs. in the presence of 50 ml. 40%  $\text{HCl}$  in abs.  $\text{EtOH}$ . Afterward, evap. in vacuo at  $30^\circ$ , dissolving the residue in abs.  $\text{EtOH}$ , evap. again, and drying in a desiccator. In the alk. hydrolysis of IV, 2.5 g. IV was shaken with 50 ml.  $\text{NaOH}$  solution in a current of  $\text{H}_2$ , neutralized with  $\text{HCl}$ , shaken again in a current of  $\text{H}_2$ , decolorized with 0.1 g. 10%  $\text{Pd/C}$  catalyst in a current of  $\text{H}_2$ , and filtered. The product was nondecolorative, proving that decarboxylation took place. When 3 g. IV was hydrogenated in 50 ml.  $\text{VHCl}$  in a current of  $\text{H}_2$  at  $30^\circ$  for 1 hr., treated further as above, and the acid of the product treated with the decarboxylation of guinea pig kidney, in the case of the three derivatives obtained by vapors, no  $\text{C}_6\text{H}_5$  formation was observed, whereas the substances obtained by vapors of acetylated erythron compounds generally developed measurable amounts of  $\text{C}_6\text{H}_5$ . The product obtained in this acid hydrolysis was  $\text{HCl}$ ,  $2,4,6\text{-}(\text{HO})_3\text{C}_6\text{H}_2\text{CH}_2\text{CH}_2\text{CO}_2\text{H}$  (II) with the *synthet* structure  
 (Foster and Foster)

n. When treatment is involved, 1,3-dimethoxy-4-hydroxyphenyl-2-aminopropanol is synthesized by a method which leads selectively with analogous compounds to morpholine salts. Course of 12.4 g. (0.18 g. HCl) in acid with HCl, with a cooling 5 hrs. until the acid has increased 15 g., the most heated 1.5 hrs. at 70°; poured into 50 cc. H<sub>2</sub>O containing 2 g. NaOH, and acid with ether, distill the ether residue gives 2.4 g. 1,3-dimethoxy-4-hydroxyphenyl-VII, m.p. 160-75°, in 40 cc. ether. Treating 20 g. VII in 100 cc. C<sub>6</sub>H<sub>6</sub> with 2.8 g. 20% HCl in the acid and 16.7 g. Me<sub>2</sub>CHCH<sub>2</sub>NO<sub>2</sub> a few hrs. at 0° gives 84% 1,3-dimethoxy-4-hydroxyphenyl-VIII, m.p. 144°. Treating 1 g. VIII with 5 cc. 20% HCl, evaporate the acid, and heating the residue with 50 cc. H<sub>2</sub>O gives 0.3 g. vanillin, vanillic acid, methyl, in 10%. Treating 1 g. VIII with 50 cc. H<sub>2</sub>O with a cooling and evaporate the acid of 15 cc. give 94.5% vanillic acid, methyl, in 20%. VIII in 100 cc. HCl in 200 cc. H<sub>2</sub>O and 100 cc. 5% HCl in 100 cc. H<sub>2</sub>O is hydrogenated 6 hrs. in the presence of 1 g. Pt charcoal (IX), the HCl neutralized with NaOH, the most filtered and the filtrate evaporated to give 1.3 g. VIII with 170 cc. H<sub>2</sub>O, and hydrogenated again 5 hrs. with IX, giving 5.7 g. 1,3-dimethoxy-4-hydroxyphenyl-VIII in 21% free



base (X), yellowish crystals, m. 100-101°. Methyl ester of X with  $\text{CH}_3\text{ONa}$  gives the 4-Me ester, m. 100-101°. *o*-Ac deriv. (XI), prepd. with  $\text{Ac}_2\text{O}/\text{CH}_3\text{ONa}$  at 20° in 1 hr. Treating XI 10 hrs. with 4 N HCl in aq. EtOH leaves it unchanged. Treating 0.55 g. X with 0.5 ml.  $\text{Ac}_2\text{O}$  gives 0.750 g. *o*-Ac deriv. (XI), m. 112-113°, which, refluxed 30 hrs. in 25 cc. anhyd. EtOH with 0.15 cc.  $\text{PhCH}_2\text{MgI}$  and 0.025 g. Na, gives 0.15 g. *N*-acetyl-methoxy-*o*-benzoyl-*o*-methylphenol, plates, m. 145-146°. From 1 g. III *N*-acetyl-methoxy-4-benzoyl-*o*-methylphenol (in 15 cc. aq. EtOH) treated 0.5 hr. with H in the presence of IR and the reaction product kept with  $\text{Ac}_2\text{O}/\text{CH}_3\text{ONa}$  20 hrs. at 20°, is obtained 0.2 g. V, m. 163°, melting with HCl in EtOH the *o*-Ac deriv. HCl salt, m. 192°, which with H<sub>2</sub>O gives V again. IV (3-methoxy-4-benzoyl-*o*-methylphenol, mp 130°, with  $\text{Ac}_2\text{O}$  gives III, m. 100°. Keeping 0.11 g. V with 0.5 ml. N HCl 20 hrs. at 20° and heating the melt 1 hr. on a steam bath gives a melt of diastereomers, plates, m. 184-185°, which cannot be split by crystals. Treating 0.185 g. X HCl 4 hrs. with 0.6 cc. 4 N HCl in aq. EtOH gives 20 mg. N HCl, formed by a hydroxime cleavage. Reducing 0.032 g. X HCl 10 min. with 0.5 cc. 4 N HCl in 10 cc. aq. EtOH gives a melt of diastereomers, m. 184-185°. F. 180-181°.

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Acyl migration O → N in the diastereomeric 2-aminocyclohexyl benzoates. Gábor Fodor and L. Kán (Univ., Budapest, Hung.). *J. Am. Chem. Soc.* 72, 5008-7 (1950).—*trans*-2-Aminocyclohexyl benzoate (I) (3.5 g.) in 8.7 cc. abs. EtOH and 5 cc. 5 N aq. EtOH-HCl, heated 3 hrs. at 100°, gives 40% unchanged I and 60% *trans*-2-aminocyclohexyl benzoate II (III), m. 123°. The *trans*-isomer (III) of I similarly gives 43% recovered III and 57% of the *trans*-isomer (IV) of II, m. 97°. II (0.890 g.) in 20 cc. H<sub>2</sub>O, treated with 0.86 cc. N NaOH, gives an oil which, on

scratching and addn. of excess alkali, yields 0.171 g. I. (0.23) g. IV with 0.9 cc. NaOH gave an oil which did not crystallize until the further addn. of 0.6 cc. alkali, when it yielded 0.121 g. III. The intermediate oil from II is *trans*-2-aminocyclohexyl benzoate, which can be isolated by immediate crystallization in EtOH to the *trans*-isomer (V), m. 120°. *trans*-2-Aminocyclohexyl benzoate II (0.041 g.) in 10 cc. EtOH and 0.8 g. *p*-McCallum salt in 3 cc. EtOH, stirred with excess alkali, give 0.791 g. of the *N*-acyl form (VI), m. 152°. With HCl in EtOH it yields V. Similarly 1.125 g. IV yields 0.9 g. of the *trans*-isomer (VII) of V, m. 164-70°. The *trans*-isomer of VI, m. 152°, gives VII with HCl in EtOH. A mechanism of the O → N acyl migration is presented.

C. J. West

[illegible]

Configuration of diastereoisomers 2-aminocyclohexanone and a suggested mechanism for acyl migration. N.-O. Gabor, Peter and L. Kiss (Hung. Magy. Kém. Lapok, 1962, 1, 130-130; in English), 2-ferrocenylcyclohexanone (I, in 10<sup>3</sup> g.) was obtained in 18 g. yield by treating a suspension of 10 g. of Ac<sub>2</sub>SO<sub>4</sub> (1.2 ml) in 50 ml of 10% methanol with 10 g. of N in an autoclave at 180° for 30 min with 11 under 70 mm Hg as pressure at 180° with continuous shaking, allowing to stand 2 hrs. at this temp. and pressure, filtering, evaporating the filtrate in vacuo at 35 mm, and isolating the residue with 100 ml Me<sub>2</sub>CO a few min. di-2-ferrocenylcyclohexanone (II, in 10<sup>3</sup> g.) was obtained in 17 g. yield by refluxing 18 g. I with 50 ml 18% HCl 2 hrs., evaporating the acid, diluting with water to neutral, and brominating by the Schotten-Baumann reaction. di-trans-2-ferrocenylcyclohexanone (III) was obtained by amination of 2-ferrocenylcyclohexanone followed by a Schotten-Baumann bromination of the amine at position 1 (see MacCadam, et al., p. 43, 44-45). When II was treated with 2 g. HCl, 90% di-2-ferrocenyl-2-amine (cyclohexanone-11, in 200 g.) was obtained. If the amt of HCl added was increased to 10 or 35 mmoles, the yields were 32 and 50%, resp. Powder.

treatment of III gave yields between 40%. When II or III was treated 2 hrs. in a sealed tube at 100° 2 mmoles. HCl was sufficient to reach a yield of 10%. These results are interpreted by assuming that the real shift is  $N \rightarrow C$  and not  $C \rightarrow N$  steps. First an unstable  $N$ -acetylamide IIIa is formed easily in migration of acetate, such as CII. This product is cleaved, or rearranged in order to undergo or by heating, to alk. the equal between amide and amide salt is shifted toward the amide, and an excess of HCl shifts it toward the amide salt. The 2nd step of the real shift is toward the amide to an  $N$ -acetylamide salt, the rate of which is shifted by the distance between the reacting groups. The varying distance between the substituents may also explain the occurrence of an incomplete  $N \rightarrow C$  migration even for the  $\alpha$  form. The marked difference between the rate of  $N \rightarrow C$  and  $C \rightarrow N$  migration and the occurrence of  $N$ -acetylamides becomes at some time, is evidence of their steric structure.

L. G. Frank

PODOR, G.; TOT, I.; KOVACS, E.; KISS, J.

Synthesis of chloroanphenicol. Izv. AN SSSR. Otd. khim. nauk no. 3:  
440-451 My-Je '440-451 (MIRA 8:9)

1. Institut organicheskoy khimii Universiteta g. Seged, Vengriya  
(Acetamide)

② 5

Note on preparation of stereoisomeric  $\alpha,\beta$ -diphenyl- $\beta$ -hydroxyethylamines by Weiffard, et al. *Ann. Chim. Acad. Sci. Hungar.* 6: 615 (1962) (in English).—Review of literature concerning the stereochemistry of the  $\alpha,\beta$ -diphenyl- $\beta$ -hydroxyethylamines and expl. details for prepn. of the high-melting racemate (I) of 1,2-diphenyl-2-aminoethanol. Benzil monophenylhydrazones (4.8 g.) in 200 ml. abs. EtOH mixed with 10 ml. 6N HCl in abs. EtOH, and 1 g. 10% Pd-C in 1 hr. absorbed 1080 ml. H (calcd. 1010 ml.); evapn. of the EtOH and neutralization of the 1.HCl in 100 ml. water with 10% NaOH gave 3.1 g. (20.5%) I, m. 164–6°. M. D. A.

Reductive cleavage of derivatives of oxo mono(phenylhydrazones). (Israel Kim (Univ. Secod. Hong.). *Acta Chim. Acad. Sci. Hung.* 8, 100-200 (1962) (in German).—The method described earlier (cf. preceding abstr.) was extended to obtain other aryl alkanolamines by the reductive cleavage of benzil monophenylhydrazones over Pd-C. Nor-ephedrine was prepd. in good yield in this way from PhCOC(:NNHPh)Me (I). This confirms the correctness of the expts. of Auwers and Ludwig (*C.A.* 31, 675) as against the statements of Kolb (*Ann.* 291, 287 (1900)) proving that I is a phenylhydrazone deriv. In the reduction of PhN:NCI((CHO)Ba (Ia) under similar conditions both the N—N bond and the C—N bond are broken. The BaCl((NH<sub>2</sub>)CHO formed is stabilized, by dimerization or polycondensation. PhNHNH<sub>2</sub> formed here as a by-product is partly reductively cleaved to NH<sub>2</sub> and PhNH<sub>2</sub>. The ultraviolet absorption spectrum of Ia, and the behavior of Ia when treated with reagents characterizing various radicals confirms the probability of the existence of a hydrogen-bridge or of an inner salt. István Földi

KISS, J.

Hungarian Technical Abst.  
Vol. 6 No. 1  
1954

14. The trans-ethylnic configuration of sphingolipids  
— A sphingolipid trans-ethylnic substance — G. KISS and J.  
KISS (Hungarian Journal of Chemistry — Magyar Kémiai  
Folyóirat — Vol. 39, 1953, No. 1, pp. 29–31, 6 figs.)  
Triacetyl sphingolipid and triacetyl dihydrosphingolipid  
do not give a m.p. depression in the mixture but  
form mixed crystals. The case is the same with tri-nonyl  
derivatives. Considering the trans role the conclusion  
can be drawn that natural sphingolipid is of a trans  
ethylnic configuration.  
G. K.

P-31-54  
JJP

④ 4



Chemical Abst.  
Vol. 48 No. 4  
Feb. 25, 1954  
Biological Chemistry

The structure of brain sphingosine. József Kise and Dezső Bánfi (Univ. Szeged, Hungary). *Magyar Kém. Folyóirat* 89, 233-4 (1953); cf. *C.A.* 47, 8644a. — Natural sphingosine was converted by ozonolysis into  $\alpha,\gamma$ -dihydroxy- $\beta$ -amino-butyrolactone. The latter was then converted into threoninol or into a related compd. of known configuration. Aminotetroses were isolated in form of its dinitrophenyl osazone among the decompos. products of the ozonolysis of diacetylsphingosine. Aminotetronic acid obtained at the ozonolysis of triacetylsphingosine was sepd. in a cryst. form as its well defined lactone-HCl. István Fialdy



1. 1.5 g. of material I gave an oil which was washed 20 ml. of Et<sub>2</sub>O (boil) with 30 ml. 30% H<sub>2</sub>O<sub>2</sub>. Evapn. of the aq. soln. gave 1.3 g. oil; this on standing 1 week in 25 ml. 3N HCl, concg., adding alc. and Et<sub>2</sub>O, evapd., and crystg. the residue from 10 ml. alc. gave 0.04 g. III. Evapn. of the filtrate and 2 resins of the residue (0.54 g.) with alc. gave oil. III (0.28 g.) in 15 ml. H<sub>2</sub>O was shaken 3 days with 11 and 0.5 g. Pd-C (12% PdO), the combined filtrate and washings evapd. *in vacuo*, and the residue treated with two 25-ml. portions EtOH and EtOH-Et<sub>2</sub>O to give 0.112 g. 3-amino-2,4-dihydroxybutyraldehyde-HCl (IV), m. 207-8° (decampn.).  $\alpha$ : 14.225° (c 0.4, H<sub>2</sub>O). IV (0.11 g.) in 15 ml. H<sub>2</sub> hydrogenated 2 weeks with 0.5 g. Pd-C, the filtrate and washings evapd. *in vacuo*, and the residue, crystd. from MeOH-Et<sub>2</sub>O, gave 0.33 g. hygroscopic 2,4-dihydroxy-2-amino-1,3,4-butanetriol (V), m. 102-4°.  $[\alpha]_D^{25}$  -1.78° (c 0.534, H<sub>2</sub>O). IV could also be hydrogenated with

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Raney Ni at 120 atm. and 80°. *o*-threo-2-benzamido-3,4-dihydroxy- $\gamma$ -butyrolactone (2 g.) and 10 ml.  $\text{SOCl}_2$  gave 1-(+)-*erythro*-2-amino-3-hydroxy- $\gamma$ -butyrolactone-HCl (VI) by the method of Hamel and Painter (C.A. 48, 1806). A by-product (0.8 g.), m. 190-1° (from alc.), is optically 2-benzamido-3-chloro-4-hydroxy- $\gamma$ -butyrolactone (VII),  $[\alpha]_D^{25}$  -120° (c 0.5, EtOH). An aq. suspension of 1.2 g. VII treated with 10 ml. *N* NaOH gave 0.7 g. 2-phenyl-5-hydroxymethyl-4-carboxymazoline lactone (VIII), m. 153-54° (from 1:1 EtOH-petr. ether). Heating (100-5°) 2-phenyl-5-hydroxymethyl-4-carboxymazoline lactone-HCl also gave VIII. VIII was optically inactive and could not be hydrogenated at 100 atm. with Raney Ni. VI (2.5 g.) (H<sub>2</sub> and P., loc. cit.) in 150 ml. H<sub>2</sub>O with 15 g. Raney Ni hydrogenated 12 hrs. at 80° and 120 atm., 0.1 g. Mg powder added, hydrogenation continued 4 hrs. at 100-3° and 120 atm. (when the Fehling test was neg.), the combined filtrate and washings cooled, in vacuo and evapd. with alc. CaH<sub>2</sub>, and the residue (2.1 g.) crystd. from MeOH-Et<sub>2</sub>O gave 1-(+)-*erythro*-2-amino-1,3,4-butanetriol-HCl (IX), m. 201-3° (firming),  $[\alpha]_D^{25}$  1.67° (c 3, H<sub>2</sub>O). IX is the antipode of V. Similar reduction of 2.5 g. of the *o*-isomer of VI (H<sub>2</sub> and P., loc. cit.) gave 0.8 g. V,  $[\alpha]_D^{25}$  -1.61° (c 0.5, H<sub>2</sub>O), m. 200° (decamp.), which did not depress the m.p. of V from 1. Thus sphingimine is *o*-*erythro*-2-amino-1,3-dihydroxy-4-*trans*-octabromine.  
(George H. Sutherland)

K. S. J.

/ Synthesis of chloramphenicol. G. Fodor, I. Tóth, K. Kovacs, and J. Kiss (Univ. Szeged, Hung.). *Invest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1955, 441-51; *Bull. Acad. Sci. U.S.S.R. Div. Chem. Sci.* 1955, 391-4 (Engl. translation); cf. Fodor, *et al.*, *C.A.* 44, 7273g. —  $\text{PhCH}(\text{OH})\text{CH}_2\text{OAc}$  (90 g.) in 450 ml.  $\text{PhMe}$  added to 400 g.  $\text{NaNO}_2$  in 200 ml.  $\text{H}_2\text{O}$  in a dark vessel, the stirred mixt. treated 7 hrs. at  $0^\circ$  with 1.4 l. 20%  $\text{H}_2\text{SO}_4$  with occasional bubbling of  $\text{CO}_2$  to break the foam, and the  $\text{MePh}$  layer filtered gave the crude product, which, washed with  $\text{EtOH}$  and  $\text{EtOH-Et}_2\text{O}$ , yielded 89 g. *DL-erythro-PhCH(NO)CH(NO\_2)CH\_2OAc*, m.  $124^\circ$ , discoloring after several weeks' storage.  $\text{III}$  (50 g.) treated with stirring in 224 ml.  $\text{Ac}_2\text{O}$  at  $25-30^\circ$  over 10 min. under  $\text{CO}_2$  with 24 g. concd.  $\text{H}_2\text{SO}_4$  and 72 ml.  $\text{Ac}_2\text{O}$ , stirred 50 min. longer, dild. with 1 l. ice water, and kept 3-4 days in a refrigerator gave 60% *DL-threo-PhCH(O\_2CCHClCH\_3)CH(NO\_2)CH\_2OAc* (II), m.  $72^\circ$  (from  $\text{EtOH}$ ). ( $\text{CH}_2\text{ClCO}_2\text{H}$  in the above reaction similarly gave, after treatment of the quenched product with  $\text{Na}_2\text{CO}_3$  and  $\text{NaOAc}$ , 46% *DL-threo-PhCH(O\_2CCHClCH\_3)CH(NO\_2)CH\_2OAc* (II), m.  $74^\circ$  (crude), m.  $82^\circ$  (from  $\text{EtOH}$ ).  $\text{I}$  (54 g.) in 960 ml.  $\text{Me}_2\text{CO}$  treated over 10 min. with 1.156 l.  $N$   $\text{HCl}$ , then refluxed 3.5 hrs., concd., treated with 130 g.  $\text{NaHCO}_3$ , extd. with  $\text{Et}_2\text{O}$ , and the ext. shaken with  $\text{KIHSO}_4$  gave 68.5% *DL-threo-PhCH(OH)CH(NO\_2)CH\_2OH*, m.  $82.5^\circ$  (from  $\text{Et}_2\text{O}$ -petr. ether). Hydrogenation of  $\text{I}$  in  $\text{AcOH}$  over  $\text{Pd-C}$  at 60 atm. gave 40% *DL-threo-PhCH(OH)CH(NHAc)CH\_2OAc* (III), m.  $108-9^\circ$  (cf. U.S. 2,481,885, *C.A.* 45, 669a), which (1 g.), kept 24 hrs. with 5 ml. quinoline and 1.5 g.  $\text{Ac}_2\text{O}$ , gave 1.1 g. *DL-threo-PhCH(OAc)CH(NHAc)CH\_2OH*, m.  $79-86^\circ$ .  $\text{III}$  refluxed 2 hrs. with 5%  $\text{HCl}$  gave 58% *DL-threo-PhCH(OH)CH(NH\_2)CH\_2OH.HCl, m.  $192^\circ$  (cf. U.S. 2,513,215, *C.A.* 45, 170a).  $\text{I}$  hydrogenated in*

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$\text{AcOH}(\text{CO}_2\text{H})$  over  $\text{Pd-C}$  at atm. pressure gave 10.5% *DL-threo-PhCH(OH)CH(NH\_2)CH\_2OH bisulphate*, m.  $139-40^\circ$  (from  $\text{EtOH}$ ), which yielded the free base, m.  $82-8^\circ$ . Electrolytic reduction of  $\text{I}$  in 100 ml.  $\text{AcOH}$  and 200 ml. 96%  $\text{EtOH}$  with a Hg pool electrode and 20%  $\text{HNO}_3$  anolyte in a porous cup at 0.07 amp./sq. cm. and  $44-5^\circ$ , the catholyte being acidified with  $\text{HCl}$ , gave in 3 hrs. from 14 g.  $\text{I}$ , 2.4 g. *DL-threo-PhCH(OH)CH(NH\_2)CH\_2OAc*, m.  $169-70^\circ$  (from  $\text{AcOH}$ ).  $\text{II}$  similarly treated in aq.  $\text{HCl}$  at  $35-7^\circ$  gave 28%  $\text{Cl}$ -free product, m.  $168^\circ$ .  $\text{PhCH(OH)CH(NH_2)CH_2OH}$  (19.7 g.) in 160 ml.  $\text{H}_2\text{O}$  and 200 ml.  $\text{EtOAc}$  treated with stirring in 10 min. with 30 ml. 40%  $\text{NaOH}$  at  $30^\circ$ , with the pH kept at 6-8, the aq. phase extd. with  $\text{EtOAc}$ , the combined org. phases evapd., and the residue treated with aq.  $\text{EtOH.HCl}$  gave 50.5% *DL-threo-PhCH(OH)CH(NH\_2)CH\_2OAc.HCl*, m.  $174^\circ$ , which with  $\text{K}_2\text{CO}_3$  gave the free base, m.  $176-8^\circ$ , identified as *DL-threo-PhCH(OH)CH(NHAc)CH\_2OH*.  $\text{CH}_2\text{ClCO}_2\text{H}$  instead of  $\text{EtOAc}$  in the above gave 64.8% *DL-threo-PhCH(O\_2CCHClCH\_3)CH(NH\_2)CH\_2OH.HCl*, m.  $145^\circ$ . The latter (15.76 g.) treated with 45 ml.  $\text{H}_2\text{O}$  and 90 ml.  $\text{EtOAc}$ , then at  $25^\circ$  with 3.45 g.  $\text{K}_2\text{CO}_3$ , stirred 5 min., and extd. with  $\text{EtOAc}$  gave 78% *DL-threo-PhCH(OH)CH(NHCOCHClCH\_3)CH\_2OH* (IIIA), m.  $64-5^\circ$  (from 50%  $\text{EtOH}$ ), which stirred with pyridine- $\text{Ac}_2\text{O}$  0.5 hr. at  $100^\circ$ , yielded 83% *DL-threo-PhCH(OAc)CH(NHCOCHClCH\_3)CH\_2OAc* (IIIB), m.  $63-5^\circ$  (from 90%  $\text{EtOH}$ ). IIIA kept 15 min. at  $70^\circ$  with  $\text{Ac}_2\text{O}$  gave 72% *DL-threo-PhCH(OH)CH(NHCOCHClCH\_3)CH\_2OAc* (IV), m.  $100-1^\circ$  (from  $\text{EtOAc}$ -petr. ether), which with aq.  $\text{HCl}$ ,  $\text{EtOH.HCl}$  at  $0^\circ$  yielded in 24 hrs. 74% *DL-threo-PhCH(O\_2CCHClCH\_3)CH(NH\_2)CH\_2OAc.HCl* (IVA), m.  $187^\circ$  (from  $\text{EtOH-H}_2\text{O}$ ).  $\text{IV}$  (3.2 g.) in 10 ml. dioxane treated with 5 ml. dioxane contg. 0.04 g.  $\text{HNO}_3$  at  $0^\circ$  and kept several days at  $0^\circ$  gave 75.5%  $\text{HNO}_3$  anolyte (IVB) and IVA,  $\text{C}_6\text{H}_5\text{NH}_2\text{HCl}$ .

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*Stereochemical and synthetic studies in the sphingosine field. IX. Ozonolysis of natural sphingosine.* J. Kise, O. Endo, and D. Bani (Univ. Sogori), *Acta Chim. Sinica*, 1963, 3, 341 (in English); *Ch. C.A.* 49, 4521c. — To correct a literature discrepancy (Klenk and Diebold, *C.A.* 23, 4278; Niemann and Nichols, *C.A.* 26, 3784d), the ozonolysis of sphingosine (I) and its derivs. was re-investigated. The crude sulfate of I (87 g.), obtained by the acid hydrolysis of sphingolipides from the brain and spinal cord of cattle according to Carter, *et al.* (*C.A.* 41,

6223g), suspended in 1 l. 0.5N NaOH, extd. 3 times with 1 l. ether, the solid residue from the extn. of the combined ether exts. dissolved in 120 ml. dry  $\text{C}_6\text{H}_6$ , treated at 0° with 120 ml.  $\text{Ac}_2\text{O}$ , and heated 15 min. yielded, after standing a day in the cold, 21.3 g. tri-Ac deriv. (II) of I, m. 102-4°,  $[\alpha]_D^{25} -0.7^\circ$  (c 1.1,  $\text{CHCl}_3$ ). Alk. hydrolysis of II gave crude I, m. 60-78°, which (1.1 g.) was recrystallized to yield 1.1 g. II, identical with the preceding sample. Thus, no Walden inversion had occurred during the prepn. of II from lipides by their acid hydrolysis, followed by the alk. hydrolysis of II (cf. Jenny and Grob, *C.A.* 49, 6276). Partial alk. hydrolysis of 6.4 g. II in 200 ml.  $\text{MeOH}$  by letting it stand 12 hrs. at 15° with 40 ml.  $\text{N KOH}$  in  $\text{MeOH}$ , evapng. the mixt. to 100-20 ml. at 30°, adding 20 ml.  $\text{H}_2\text{O}$ , and extg. with ether yielded from the ether ext. 3 g. N-Ac deriv. (III) of I, m. 60-5°,  $[\alpha]_D^{25} -5.5^\circ$  (c 2,  $\text{CHCl}_3$ ); mixed m.p. with the dihydro deriv. of III, 62-111°. The mother liquor from the prepn. of pure II freed from the solvent in vacuo and the residue dissolved in  $\text{CHCl}_3$  and neutralized gave an oil, b.p. 170-80° (bath temp.),  $[\alpha]_D^{25} -6^\circ$  (c 2,  $\text{CHCl}_3$ ), probably  $\text{C}_{18}\text{H}_{35}\text{CH}(\text{OR})\text{CH}(\text{NR})\text{CH}_2\text{OR}$  ( $\text{R} = \text{R}' = \text{Ac}$ ,  $\text{R}'' = \text{Me}$ ). 1.13 g. from the alk. hydrolysis of 2 g. II in 10 ml. dry  $\text{C}_6\text{H}_6\text{N}$  treated with 4 g.  $\text{p-ONC}_6\text{H}_4\text{COCl}$ , heated 15 min. on a steam bath, allowed to stand 1 day at room temp., 20 ml.  $\text{H}_2\text{O}$  added, and the mixt. extd. with  $\text{CHCl}_3$  yielded 1.14 g. tri-(p-nitrobenzoyl) deriv. (IV) of I, m. 136-8° (from 90%  $\text{Me}_2\text{CO-H}_2\text{O}$ ). Similar treatment of 2 g. dihydro-sphingosine (V) gave 2.5 g. tri-(p-nitrobenzoyl) deriv. (VI) of V, m. 144-5° (from abs.  $\text{EtOH}$ ); mixed m.p. with IV, 134-42°. Alk. hydrolysis of VI gave the N-p-ON- $\text{C}_6\text{H}_4\text{CO}$  deriv. (VII) of V, m. 124-8° (from dil.  $\text{EtOH}$ ). The stability and crystn. properties of IV, VI, and VII

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were not appropriate for ozonolysis, and only I and II were used. O<sub>3</sub> (5%) bubbled through 6 g. II in 100 ml. CHCl<sub>3</sub> 1.5 hrs. at room temp. pptd. the ozonide, and evapd. the CHCl<sub>3</sub> in vacuo, shaking the residue 60 min. with 100 ml. H<sub>2</sub>O, and cooling in ice yielded 4 g. H<sub>2</sub>O-insol. oil (VIII), sepd. by petr. ether into 1.0 g. petr. ether-sol. myristic acid, m. and mixed m.p. 51-2° (N-benzylisothiuronium salt, m. 138° (cf. Donahay, C.A. 30, 5192°), and (7) glacial AcOH-sol. myristic aldehyde (IX), which reduced Fehling soln. and yielded 0.7 g. 2,4-dinitrophenylhydrazine (X) of m. 104-5° (from EtOH). The aq. layer sepd. from VIII also reduced Fehling soln., and after evapn. of the solvent, the residual (2.23 g.) slup was acetylated to 0.52 g. AcOCH<sub>2</sub>CH<sub>2</sub>NHAc·CH<sub>2</sub>(OAc)CHO, noncryst. but, characterized by its compd. with 2,4-(O<sub>2</sub>N)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>NH<sub>2</sub> (cf. probably the osazone of AcOCH<sub>2</sub>CH<sub>2</sub>NHAc·COCHO, m. 175-8° (decompn. softening at 180°). Also from the combined aq. mother liquors of the preceding ozonolysis products, acidified, evapd. to dryness, and the residue extd. with hot abs. EtOH, was obtained 0.3 g. 3-amino-2-hydroxy-4-butyrolactone HCl salt, m. 218-20°, [α]<sub>D</sub> 47.2° (c 0.554, H<sub>2</sub>O), which fails to give ninhydrin and Fehling soln. tests. Similar ozonolysis of I gave no isolatable products except X. The splitting of the double bond was attempted also through the epoxide: 5.1 g. II in 12 ml. CHCl<sub>3</sub> treated with 0.35 g. BrO<sub>3</sub>H in 51 ml. CHCl<sub>3</sub>, allowed to stand 2 days at 0°, and evapd. in vacuo gave a yellow oil, whose ether-insol. portion yielded 1.65 g. epoxide (XI) of II, m. 134-6° (from Me<sub>2</sub>CO).

[α]<sub>D</sub> 16.8° (c 0.6, CHCl<sub>3</sub>) (C.A. 47, 8644°). Hydrolysis of 0.6 g. XI by heating 6 hrs. at 120-35° in a sealed tube with 10 ml. H<sub>2</sub>O gave a tri-Ac deriv. of an amine tetract, but periodic oxidation failed, probably because of the migration of an Ac group so that no vicinal OH groups remained. X Preparation of several long-chain aliphatic ketones. I. Sallay. *Ibid.* 519-524 (in German) (English summary). As a step toward complete synthesis of sphingosine, the key compd., n-C<sub>17</sub>H<sub>35</sub>CH<sub>2</sub>CH<sub>2</sub>Ac (I), was prepd. after preliminary expts. on model compds. n-C<sub>10</sub>H<sub>21</sub>OH (6.4 g.) warmed 7 hrs. on a steam bath with 20.7 g. POCl<sub>3</sub> according to Pinner and Hurch (C.A. 23, 2417), gave 6.65 g. crude C<sub>17</sub>H<sub>35</sub>OPCl<sub>2</sub> (III), m. 73-83° (sample recrystd. from CHCl<sub>3</sub>). Distn. and redists. of 200 g. II in vacuo gave the fractions (g., b.p., n<sub>D</sub><sup>20</sup>): 120.5, b<sub>1</sub> 147-70°, n<sub>D</sub><sup>20</sup> 1.4445; 140-53°, 1.4424; 76, b<sub>2</sub> 154-7°, 1.4437 (III); 20, b<sub>3</sub> 155-7°, 1.4445. Ozonolysis of III according to Avinger and Reckoldt (C.A. 38, 57°) yielded 8.2 g. mixed acids, sepd. by vacuum distn. into 0.6 g. lauric, b<sub>1</sub> 90-172°, and 5.1 g. myristic acid, m. 34-40°, characterized by their N-benzylisothiuronium salts, m. 140-1° and 139°, resp. A shift of the double bond had obviously occurred during the thermal

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decomposition of II. The desired pure 1-CuH<sub>11</sub> (IV) was prepd. from CuH<sub>10</sub>/CCuH<sub>11</sub> (V) according to Waterman, *et al.* (C.A. 34, 823) by heating 130 g. V under N 4 hrs. from 150° to 360° giving 951 g. distillate (332 g. CuH<sub>10</sub>/CCuH<sub>11</sub> as residue). The oily distillate in 11 pete. ether (b. pt. 30-35°) washed with 3% NaOH and then EtOH, dried, treated with Na wire, refluxed 5 hrs., filtered, neutralized, and dried again gave 148 g. crude IV, fractionally distilled in vacuo to yield 240 g. pure IV, b.p. 153-57°,  $n_D^{20}$  1.4415. On analysis of 40 g. IV yielded the expected C<sub>11</sub>H<sub>22</sub>CHO (45 g. crude, m. 23-5° from EtOH); 2,4-dinitrophenylhydrazine in 100 ml. of Lundy, C.A. 20, 3621; IV (2.4 g.) in 50 ml. CS<sub>2</sub> and 14.4 ml. AcCl in 20 ml. CS<sub>2</sub> at 15°C. precipitated during 30 mins. with rapid stirring with 10 ml. 10% aqueous NaOH, washed, decomposed, and purified (m.p. 72-73°) to give pure 2,4-dinitrophenyl C<sub>11</sub>H<sub>22</sub>CH=O (VI) and 2,4-dinitrophenylhydrazide (VII) (yield 7.9%) pure VI, m.p. 126-127° from EtOH; VII, m.p. 115-116° from EtOH/IV. This small-scale method for the preparation of analogs of VI (C<sub>6</sub>Me<sub>5</sub>, VIII) with aromatic (I) and chlorinated previously used for the synthesis of solid ketones (Gidman and Nelson, C.A. 30, 5951). As preliminary model expts., 0.1 mole VII, prepd. according to Cason (C.A. 41, 397g), in dry CCl<sub>4</sub> was treated with ice cooling during 10 min. with 0.1 mole C<sub>11</sub>H<sub>22</sub>COCl (VIII) in 20 ml. dry CCl<sub>4</sub>, and the mixture refluxed 1 hr., cooled to 0°, and poured into 200 ml. 10% aq. H<sub>2</sub>SO<sub>4</sub>; from the CCl<sub>4</sub> layer was obtained 75% C<sub>11</sub>H<sub>22</sub>Ac, m. 51-52° (semicarbazone, m. 110°). Similar treatment of C<sub>11</sub>H<sub>22</sub>COCl in place of VIII yielded 70% C<sub>11</sub>H<sub>22</sub>Ac (IX, m. 46-48°; semicarbazone (X), m. 121-22°). These 2 good yields encouraged the use of VII in the prep.

of the desired I.  $C_{10}H_{16}CH_2CHCO_2H$  was prepd. according to Myers (C.A. 46, 1433g), and its acid chloride (XI), m. 166-8°, with  $SOCl_2$  in the usual way. Treatment of 0.1 mole XI with 0.1 mole VII as above yielded 80% crude and 50% pure I, b.p. 158-80°,  $n_D^{20}$  1.4590 (semicarbazone, m. 110-12°, mixed mp with X, 118-20°). Taken as evidence for a *trans*-ethylene configuration in I of Todd and Kice (C.A. 44, 322e). Oxidation of I (0.05 mole) by  $H_2O_2$  oxidation gave 90% tartaric acid, and reduction of I by  $Pd/C$  gave IX, both results being confirmations of the structure of I. The attempted combination of I with  $Hg/CO_2$  in the presence of  $NaH$  of Schwarz and La Forge (C.A. 42, 1231a) gave unacceptably  $C_{10}H_{16}$  with perhaps a small loss of  $C_{10}H_{16}CH_2CHCO_2H$  (DEI); this reaction will be further investigated XIII. Preparation of 1,3-dic-2-oxocyclohexylidene-1,3-dioxocane (I, Salway and P. Brown, J. Org. Chem. English, C.A. 49, 9824c). The previously reported synthesis (C.A. 49, 5898d) of  $\alpha$ - $C_6H_4CH_2OH$ -CH(CN)H- $\alpha$ - $C_6H_4CH_2OH$  is modified for the use of the Jaffe-Klingenberg reaction (C.A. 247, 216 [1898]) on 1,4-pyridinedicarboxylic acid (III). Fused  $C_6H_4$ - $CO_2H$  treated with  $SOCl_2$  according to Kalden and St. Br. (C.A. 31, 5559e), yielded 70% pure  $C_6H_4-COCl_2$  (III), b.p. 155-2-80°. Adding 55.2 g.  $\alpha$ - $C_6H_4CH_2OH$  in 400 ml. ether, dropwise to 9.36 g. powder, Myers found, after stirring, refluxing 2 additional hrs., adding dropwise 97.76 g. III to the cooled mixt., refluxing 1 hr., and pouring into 150 ml. 10%



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HCl yielded from the ether layer 120.1 g. (99%) II, b.p. 175° (cf. Viscontini and Merckling, C.A. 47, 12252e).  $p\text{-O}_2\text{NC}_6\text{H}_4\text{N}_2\text{Cl}$  (from 2.67 g.  $p\text{-O}_2\text{NC}_6\text{H}_4\text{NH}_2$ ) in 10 ml. ice-cooled H<sub>2</sub>O added to 7.35 g. II in 12 ml. EtOH and 0.46 g. Na in 15 ml. EtOH and the resulting emulsion stirred 30 min. at room temp. yielded from the ether ext. 1.6 g. (10.6%)  $p\text{-O}_2\text{NC}_6\text{H}_4\text{NH}_2\text{-C(CO}_2\text{Et)}_2\text{CO}_2\text{C}_6\text{H}_4\text{NH}_2$  (IV), m. 74-75° from EtOH. On hydrogenation over Pd-C in 25 ml. abs. EtOH acidified with 2.4 ml. 20.7% HCl in dry ether, 0.45 g. IV absorbed 220 ml. H<sub>2</sub> (theoretical, 224 ml.) and yielded inactive  $\text{C}_6\text{H}_5\text{COCH(CO}_2\text{Et)}_2\text{NH}_2\text{Cl}$  (V), m. and mixed m.p. 114-16° (from AcOEt) (yield not given). Previously reported procedures (loc. cit.) changed V by means of Ac<sub>2</sub>O and AcOAg to 67% inactive  $\text{C}_6\text{H}_5\text{COCH(CO}_2\text{Et)}_2\text{NHAc}$ , m. 71-3° (2,4-dinitrophenylhydrazide, m. 105-7°), and thence by means of LiAlH<sub>4</sub> (Kollmitzsch, et al., C.F. 49, 22934) to 90% mixed *threo*- and *erythro*-racemates of I, m. 90-107°, sepal. by fractional crystn. of the tri-Ac deriva. (VI). The mixed racemates (1.815 g.) in 60 ml. dry C<sub>6</sub>H<sub>6</sub>N and 6.3 ml. Ac<sub>2</sub>O kept 48 hrs. at 20°, evapd. in vacuo at 40°, and the residue taken up in ether yielded 2.06 g. (91%) crude VI, m. 80-70°. Fractional recrystn. from petr. ether (b. 25-40°) sepal. 2 compls., m. 80-2° and 66-8°, resp. [cf. for the *threo*-racemate of I, m. 87-8° and 85-6°, found by Grob, et al. (C.A. 46, 6590a), and Carter,

et al. (C.A. 48, 9037g), resp.]. XIV. Structure of sphingoglycosides. J. Kiss and I. Jurecek. Ibid 477-80 (in English).—A preliminary communication. The only unsolved structural problem for the 3 sphingoglycosides (I) is the question of  $\alpha$ - or  $\beta$ -linkage of the galactose. Ceratol, keratin, and nervon were separately hydrolyzed and  $\ln[1/\eta]$  values detd. for the liberated sugars, together with those for the hydrolysis product of a P<sub>1</sub> galactose. Curves for  $\ln[1/\eta]$  values vs. time are similar for all 4 sugars, and the  $\alpha$ -linkage is therefore probable for all. This conclusion is confirmed by the slow rate of mercaptoysis at room temp. of I (cf. Lemieux, C.A. 48, 1346) and by enzymic tests. Paper details are to be reported later.

H. S. French

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Jurecik, I. Stereochemical and synthetic studies in the sphingolipid field. Pt.

11. The structure of sphingoglycosides. In English. p. 477.  
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ABS. JOUR.	:	AZKhim., No. 21 1959, No.	75091
AUTHOR	:	Kiss, J. and Sirokman, F.	
TYPE	:	Not given	
TITLE	:	Stereospecific Synthesis of Erythro-2-amino-1,3,4-trihydroxybutane	
ORIG. PUB.	:	Chimia, 13, No 4, 114 (1959)	
ABSTRACT	:	<p>The structure of natural sphingosine has been confirmed by the synthesis of D-erythro-2-amino-1,3,4-trihydroxybutane (D-1). The trans-dibenzyl ester (DBE) of 2,3-epoxy-1,4-butanediol was prepared from trans-1,4-dibromo-2-butene and <math>C_6H_5CH_2ONa</math> via the trans-DBE of 2-butene-1,4-diol. Amination of the latter product gives the DBE of 1, mp 61-63°, which is cleaved into the antipodes of L-glutamic acid. The glutamate of the DBE of 1, mp 186°, is debenzylated to give D-1.</p>	

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B009/B057

24.7100 (1043)

AUTHOR: Kiss, József

TITLE: The Structure of Real Crystals - II. Color Centers in  
Alkali Halide Crystals

PERIODICAL: Fizikai Szemle, 1960, Vol. 10, No. 10, pp. 309-315

TEXT: Introduction: The examination of the so-called color centers obtained in alkali halides by cathode-ray bombardment gives much information on the structure of these compounds and on their bonds. I. Color centers: 1) Coloring methods: Besides by cathodic irradiation, crystals can be colored additively (by heat treatment or electrolysis) or photochemically. Z. Gyulai and co-workers (Ref. 1) produced coloring by pressure and subsequent heat treatment. 2) F-band: In the visible spectrum of crystals treated by methods under 1), a characteristic absorption band appears so named by Pohl. A general formula for it was given by M. F. Deygen (Ref. 3). F-centers are irregularities produced in the course of coloring, and can be destroyed by photochemical or heat treatment. 3) Features of crystals containing F-centers: a) photoconduction; b) development of the F'-band

Card 1/3

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The Structure of Real Crystals - II. Color  
Centers in Alkali Halide Crystals

H/016/60/010/010/004/004  
B007/B057

overlapping the F-band. The F'-center behaves like a singly-charged negative ion. The F-center is thus neutral. 4) Lattice defects: As against "ideal crystals", real crystals present defects or irregularities such as: a) ion or electron defect or excess; b) structural defects (dislocations, block boundaries etc); c) chemical deficiencies (outer atoms or ions). Electric defects are of basic importance. In a neutral crystal, the Coulomb space can develop: a) as the so-called Frenkel' defect; b) as the Schottky defect; c) as self-capture, so named by L. Landau (Ref. 7). F-centers appear to be electrons captured in a thermodynamically developed negative ion defect. 5) Determination of the F-center concentration: The different (optical, density, and chemical) measurement methods show good agreement and confirm previous ideas. 6) The mechanism of development of color centers: In photochemical coloring, ionizing radiation releases photoelectrons; this is the primary effect of radiation. In the crystal, every temperature is associated with a positive and a negative ion defect. These combine to nodes for energetic reasons. II. The characteristic absorption of alkali halide crystals: 1) Exciton bands: In the case of alkali halides, excitons may be considered as excited halide ions; they behave like particles possessing mobility and

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04352

The Structure of Real Crystals - II. Color  
Centers in Alkali Halide Crystals

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B009/B057

effective mass. 2)  $\alpha$ - and the  $\beta$ -bands: These may be regarded as belonging to the fundamental absorption band and develop on the long-wave side of the latter. III. Aggregates of F-centers: 1) The  $R'$ -band: This is produced by reduction of the F-band by heat treatment. 2) The  $R_1$ -,  $R_2$ -, M- and

N-centers and their absorption bands: Scott and, later, Petroff (Ref. 17) observed the build-up of several well-defined bands instead of the  $R'$ -band, if the irradiated crystal is cooled. IV. Colloid bands: M. Savostyanova (Ref. 24) examined absorption bands in NaCl, produced by Na-colloids. The color-center problem covers a wide range: V-bands in the ultraviolet region, Z- and U-bands in the visible spectrum are not treated in this paper. There are 8 figures and 24 references: 3 Soviet, 9 German, 9 US, 2 British, 1 Dutch, 1 Japanese, and 1 Hungarian.

ASSOCIATION: Építőipari és Közlekedési Egyetem Kísérleti Fizikai Inté-  
zete  
(Laboratory of Experimental Physics, University of the  
Building Industry and Communications)

Card 3/3



KISS, Jozsef, bronzermes ujito; KONNER, Janos

One out of ten thousand; Jozsef Kiss, bronze medal winning innovator. Munka 11 no.6:28 Je '61.

1. Hidepito Vallalat epitesvezetoje (for Kiss). 2. "Magyar Radio" rovatvezetoje (for Konner).

KISS, Jozsef, dr.

Experiences with a simple method of manometric cholangiography during surgery. Orv. hetil. 103 no.45:2136-2138 11 N '62.

1. Szegedi Orvostudományi Egyetem, I. Sebészeti Klinika.  
(CHOLANGIOGRAPHY) (MANOMETRY)

KISS, Jozsef

Hair salt. Fiz szemle 14 no. 71205-206 31 1971.

1. Research Group of Crystal Growth, Hungarian Academy of Sciences,  
Budapest.

**AUTHOR:** Kinn, James

natural rock-salt crystals of needle-like configurations (Naarsals)

ment of an organized defense against the disease. 17

KISS, JOSEF. 11 G

a

Immune experiments with antigens of different groups. 1. Mita Ken-Kin and Josef Kiss (Electro-chemical Karyoplasma-lysis). *Wissenschaft. Monatsh.* 1947, 1, 104-105. - Intra-venous injections of blood of a group different from that of the subject and of saline as immunizing agents increased the haemagglutination and the haemolysis resistance. In the serum of persons treated a specific antibody is formed which precipitates the homologous antigen in saline. 14 references. (Javan kindly)

450.564 METALLURGICAL LITERATURE CLASSIFICATION

TUPAJ, Pal, dr.; KISS, Julia, dr.; SZORADY, Istvan, dr.

On the clinical significance of ceruloplasmin. Orv. hetil.  
105 no.33:1545-1550 16 Ag '64.

1. Szegedi Orvostudományi Egyetem, Gyermekklinika (Igazgató:  
Boia Lomokos dr.).

KICS, K.

Professional agricultural circles. p. 24. (Magyar Mezőgazdaság, Vol. 11, no. 2, Jan. 1956  
Budapest)

SO: Monthly List of East European Accession (REAL) LC, Vol. 6, no. 7, July 1957. Uncl.

TIGYI, A.; MIRISZLAI, E.; KISS, K.; LISSAK, K.

Significance of vagal afferentation in the regulation of diencephalic vegetative reactions. Acta physiol.hung. 17 no.4:401-406 '60.

1. Institute of Physiology, Medical University, Pecs.  
(VAGUS NERVE physiol)  
(DIENTRPHALON physiol)



HUNGARY

BOHENSZKY, Gyorgy, Dr. BOKOR, Zsuzsa, Dr. KUSTOS, Gyula, Dr. KISS, Kornelia, Drs. Medical University of Pecs, I. Medical Clinic (Pecsi Orvostudományi Egyetem, I. Belklinika).

"The Significance of Phonocardiograms Obtained from a Lead Through the Esophagus."

Budapest, Orvosi Hetilap, Vol 104, No 18, 5 May 63, pages 829-831.

Abstract: [Authors' Hungarian summary] The authors discuss the performance of the Bohenszky-Idelenyi esophageal microphone probe. The sound effects obtained from the dorsal surface of the heart are valuable in the diagnosis of mitral abnormalities. 5 Western, 3 Eastern European references.

1/1

KISS, K.

"The Pneumatic Transportation of Cement" p. 330 (Politeanrag, Vol. 5, No. 10,  
October, 1953, Budapest)

SO: Monthly List of East European Russian Accessions, Vol. 3, No. 3, Library of Congress, March 1954, Uncl.

KISS, KAROLY

Hungary /Chemical Technology. Chemical Products  
and Their Application

I-12

Silicates. Glass. Ceramics. Binders.

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31679

Author : Kiss Karoly

Title : Asbestos and Its Uses

Orig Pub: Epitoanyag, 1955, 7, No 3, 102-109

Abstract: Detailed description of the mechanical, chemical and thermal characteristics of different varieties of asbestos. The deposits and the utilization methods are described. Results of experiments on preparation of synthetic asbestos are cited.

Card 1/1

KISS, K.

KISS, K. Production of asbestos cement and problems of its quality. p. 107

Vol. 49, no. 6, June 1956

EPITOANYAD

Budapest, Hungary

SO: East European Accession Vol. 6, no. 3, March 1957

KISS, K.; KOERSZEGI, P.

Investigation of the ruptured structure of the coal basin in Csongrád by geophysical methods. p. 681.

BANYASZATI LAPOK. (Magyar Banászati és Kohászati Egyesület) Budapest, Hungary. Vol. 14, no. 10, Oct. 1959.

Monthly List of East European Accessions (EEAI) LC, Vol. 26, no. 1/2, 1959. Uncl.

KISS, Karoly

Technical development problems of the Szolnok-Bekescsaba-  
Iokoshaza main line. Vasut 14 no.11:14-15 N '64.

1. Deputy Head, Directorate of the Hungarian State Railways,  
Szeged.

KISS, Karoly

Preparation of the 1961 production plans. Munka 10 no.12:8  
D '60.

1. Szakszervezetek Orszagos Tanacsa szervezesi osztalyanak  
helyettes vezetoje.

CSANADI, Gyorgy, dr., egyetemi tanar; FASKERTI, Sandor; SZABO, Dezzo, dr., a kozlekedestudomanyok kandidatusa, okl.mernok; CSUHAY, Denes; TAKACS, Endre; CSABAI, Rudolf; NAGY, Rudolf; KUTAS, Laszlo, mernok; VASARHELYI, Boldizsar, dr., a muszaki tudomanyok doktora, tanszek-vezeto egyetemi tanar; KOLLER, Sandor, muegyetemi adjunktus; KALNOKI KISS, Sandor; GYOMBER, Sandor; TALLO, Gyula; KOZARY, Istvan; SZILAGYI, Lajos; HEGYI, Kalman, okl.mernok; BERCZIK, Andras; MARKI, Laszlo; PALFI, BUDINSZKI, Endre; NAGY, Endre, okl.mernok; SZATMARY, Ferenc; MAGORI, Judit; CSIKHELYI, Bela; MESZLERI, Zoltan; VEROSZTA, Iare; ZSICA, Sandor; TOROK, Istvan; KOMCZ, Laszlo; WESSELY, Ferencne; SZABO, Bela; KOMOROCZI, Lajos; GINTL, Jozsef; CSONTOS, Dezzo; JAKAB, Sandor; LOVASZ, Istvan, mernok; KISS, Karoly, ~~KODOLCZY, Karoly~~

The City Transportation Conference in Szeged. Kozl tud az 12 no.2: 49-54 F '62.

1. Akademiai leveleso tag, a kozlekedes- es postaugyi miniszer elso helyettese, es "Kozlekedestudomanyi Szemle" szerkeszto bizottsagi tagja (for Csanadi) 2. Kozlekedes- es Postaugyi Miniszerium Muszaki Felugyeleti Osztalyanak vezetoje (for Faskerti) 3. Fovarosi Tanacs Vegrehajto Bizottsaga VIII. Varosrendezesi es Epiteszeti Osztalyanak munkatarsa, es "Kozlekedestudomanyi Szemle" szerkeszto bizottsagi tagja (for Szabo)

(Continued on next card)



**GRANATI**, Gyorgy --- (Continued) Card 2.

4. Fomernok, Kozlekedes- es Postaugyi Miniszterium Kozlekedespoli-  
tikai Osztalyanak munkatarsa (for Csuhay) 5. Kozlekedes- es Postaugyi  
Miniszterium Autokozlekedesi Vezirigazgatóságának szakosztályvezetője  
(for Takacs) 6. MAV főintéző, a Kozlekedestudományi Egyesület miskolci  
területi szervezetének titkara (for Csabai) 7. Fomernok, a Fovarosi  
Tanács Vegrehajto Bizottsaga Kozlekedesi Igazgatósaga helyettes  
vezetője (for Nagy) 8. Fovarosi Tanács Vegrehajto Bizottsaga  
Kozlekedesi Igazgatósaganak fejlesztési előadója (for Kutas)  
9. "Kozlekedestudományi Szemle" szerkeszto bizottsagi tagja (for  
Vasárhelyi) 10. Csoportvezeto fomernok, Debrecen m.j. Varosi Tanács  
Vegrehajto Bizottsaga Ipari es Kozlekedesi Osztaly (for Kalnoki Kise)  
11. Rendorornagy, Csengrad Megyei Rendorfokapitanysag Kozrendvedelmi  
Osztalya (for Gyomber) 12. Fomernok, Miskolc m.j. Varosi Tanács  
Vegrehajto Bizottsaga Epitesi es Kozlekedesi Osztaly (for Tallo)  
13. Fomernok, Kozlekedes-es Postaugyi Miniszterium Utoosztalya (for  
Kosary) 14. Fovarosi Tanács Vegrehajto Bizottsaga VIII. Varosrendezesi  
es Epiteseti Osztalyanak vezetője (for Szilagyi) 15. Ut-Vasuttermeszo ~~Minis-  
terium~~ Kozlekedesi Osztalya vezetője (for Hegyi) 16. BUVATI Kozlekedesi es  
Kommunikacios Osztalyanak vezetője, Budapest (for Berczik) 17. Peca m.j.  
varos Tanácsa BV Epitesi es Kozlekedesi Osztalyanak vezetője (for  
Marki)

(Continued on next card)

CSANADI, Gyorgy --- (Continued) Card 3.

18. Szeged m.j. Varosi Tanacs Epitesi es Kozlekedesi Osztalyanak  
fomernoke (for Palfi Budinszki) 19. Budapest Fovarosi Tanacs Melyepitesi  
Tervezo Vallalat iranyito tervezoje (for Endre Nagy) 20. Debreceni  
Kozlekedesi Vallalat igazgatoja (for Szatmary) 21. Budapest Fovarosi  
Tanacs Melyepitesi Tervezo Vallalat tervezomernoke (for Magori)  
22. Budapest Fovarosi Tanacs Melyepitesi Tervezo Vallalat tervezomernoke  
(for Csikhelvi) 23. Miskolci Kozlekedesi Vallalat fomernoke (for Meszler)  
24. Kozlekedes- es Postaugyi Miniszterium Autokozlekedesi Focastalyanak  
fomernoke (for Veroszta) 25. Szegedi Kozlekedesi Vallalat fomernoke  
(for Zsiga) 26. Miskolci Kozlekedesi Vallalat fokonyveloje (for Torok)  
27. Debreceni Kozlekedesi Vallalat fomernoke (for Koncz) 28. Penzugy-  
miniszterium foeladoja (for Wessely) 29. Pecs Kozlekedesi Vallalat  
igazgatoja (for Szabo) 30. Epitesugyi Miniszterium Varosrendezesi  
Focastalyanak mernoke (for Komorocsi) 31. Fovarosi Villamosvasut  
Fomernoke (for Gintl)

(Continued on next card)

CSANADI Gyorgy — (Continued) Card 4.

32. 51-es Autoközlekedési Vállalat munkatársa (for Csontos).
33. Ut-Vasuttermelő Vállalat irodavezető főmérnöke (for Jakab).
34. Budapesti Helyierdők Vasutak osztályvezetője (for Lovász).
35. Magyar Államvasutak igazgatóhelyettese (for Kiss, Karoly).
36. Magyar Államvasutak vezérigazgatóhelyettese (for Rodonyi).

KISS, Karolyne, dr.

Conference on the technical language at the Hungarian  
Academy of Sciences. Ipari energia 4 no.8:183,187 Ag '63.

1. Hotechnikai Kutato Intezet.

KISS, Karolyne, dr.

Conference on the technical language at the Hungarian  
Academy of Sciences. Ipari energia 4 no.8:183,187 Ag '63.

1. Hotechnikai Kutato Interet.

PATAKFALVI, Albert, dr.; LENARD, E. Gergely, dr.; KISS, Kornelia, dr.

A contribution to the clinical picture of malignant reticulosis. Orv.  
hetil. 103 no.9:405-407 Mr '62.

1. Pecsé Orvostudományi Egyetem, I Belklinika.

(RETICULOENDOTHELIOSIS pathol)

BONEHSZKY, Gyorgy, dr.; BOKOR, Zsuzsa, dr.; KUSTOS, Gyula, dr.; KISS,  
Kornelia, dr.

On the significance of phonocardiograms taken from the esophagus.  
Orv. hetil. 104 no.18:829-831 5 My '63.

1. Pecsí Orvostudományi Egyetem, I. Belklinika.  
(PHONOCARDIOGRAPHY) (ESOPHAGUS) (MITRAL STENOSIS)  
(MITRAL INSUFFICIENCY)

KISS, Ladislau

Controlling experimental indexes of school construction manual  
labor. Constr Buc 15 no.721:3 N '63.

1. Normator tehnolog la Trustul Regional de Constructii de Locuinte,  
Cluj.



KISS, Ladislau

Fewer hours in constructing an apartment. Constr Buc 16  
no. 739:3 7 March '64.

1. Nermator tehnolog la Trustul Regional de Constructii de  
Locuinte, Cluj.

COSMA, Frederic; KISS, Ladislau, tehnician de normare; IENCIU, Traian;  
BARBALATA, St.; ENESCU, Constantin, tehnician; HOTUPAS, Florian,  
correspondent; BONCUT, Remus

Problems connected with the organization of production brigades.  
Constr Buc 16 no.746:3 25 April'64.

1. Trustul Regional de Constructii de Locuinte, Cluj (for Kiss).
2. Seful serviciului organizarea muncii, Trustul Regional de Constructii de Locuinte, Cluj (for Cosma).
3. Seful serviciului organizarea muncii de la grupul de santiere nr.2 Sibiu, Trustul Regional de Constructii de Locuinte, Brasov (for Ienciu).
4. Seful serviciului organizarea muncii de la grupul de santiere nr.1, Trustul Regional de Constructii de Locuinte, Galati (for Barbalata).
5. Seful serviciului organizarea muncii, Directia generala constructii-montaj, Bucuresti (for Boncut).
6. Trustul Regional de Constructii de Locuinte, Arges (for Enescu).

KISS, Lajos

Illuminated rail barrier. Magy vasut 7 no.21:2 2N '63.

KISS, Lakos (Alsoors)

Phototubes for preventing accidents. Magyar vasut 7 no.19:2  
0 '63.

# HUNG.

Hungarian basaltic tuff (László Pócsa, Budapest). Anal. ~~from the tuff~~ (in French). Chem. analyses including detrit. of Cr, V, and Zr are given for 8 samples from Giant. Accessory minerals include alumin, spinel, chromite, beryl, and corundum. Chem. analyses are given of 2 Mn-rich nodules from basaltic deposits. They contain CoO 2.99, 1.34%, and MnO 0.70, 0.37%.  
Michael F. K. Scher

Technical tasks; HENTON, T.

Technical tasks of the new economic and planning system in the leather and shoe industry; also, remarks by Kornal Hay and others.

P. 30 (BOR-ES CIROTECHNIKA) Budapest Vol. 7, No. 2, May 1957.

30: Monthly Index of East European Accessions (MIE) Vol. 6, No. 11 November 1957.

COUNTRY : Hungary  
 CATEGORY : D  
 ADS. JOUR. : AZKhim., No. 1959, No. 2584/  
 AUTHOR : Tokats, T.; Hias, L.  
 TEST. :  
 TITLE : Investigation of the Material from Sándor  
 László Quarry  
 ORIG. PUB. : Erdőanyag, 1959, 11, No 1-2, 34-40  
 ABSTRACT : On the basis of the analyzed data on geological  
 occurrence, composition (chemical, microscopic, thermal,  
 mechanical) and properties, a reconstruction is made  
 of the geological and geochemical conditions of formation  
 of the kaolin. The starting material was igneous rocks  
 and were converted by strong hydrothermal action to  
 kaolinite and rocks with inclusions of quartz, albite,  
 and hematite. G. Vorob'yev.

DAED:

KISS, L.

"Power outlook of the world."

p. 128 (Energia Es Atomtechnika) Vol. 10, no. 2/3, May/June 1957  
Budapest, Hungary

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4,  
April 1958



KISS, L.

"Climatic-biological investigation on human beings and vegetal micro-organisms." p. 332

IDOJARAS. (Meteorologiai Intezet es Magyar Meteorologiai Tarsasag)  
Budapest, Hungary, Vol. 62, No. 6, Nov./ Dec. 1958.

Monthly List of East European Accessions (EEAI) LC, Vol 8, No. 6, June 1959  
Uncl.

KISS, LAJOS

Vasárhelyi hetkösznapok. Budapest, Hungary, Magyar Könyvkiadó, 1958. 311 p.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, no. 7, July 1959  
Uncl.

KISS, Lajos, dr., a nyelvtudományok kandidátusa

What is the etymology of "tundíroz"? Elet tud 18 no.3:85 Ja '63.

KISS, Lajos

New method for welding the thermit of broken rolling mill  
cylinders. Musz elet 18 no.10:16 16 My '63.

3

KISS, Lajos (Alsoors)

An ingenious innovation. Magyar vasut 7 no.23:1 2 D '63.

A well-laboring intertrade commission. 4

BC

$p_H$  of stomach contents and its electrometric titration. In Kins (Magyar orvosi Arch., 1933, 34, 145-151; Chem. Zentr., 1933, II, 871).—The  $p_H$  is not characterized by the usual determination of free HCl; the latent acidity is linearly proportional to the protein content. A. A. M.

ADD. 51.4 METALLURGICAL LITERATURE CLASSIFICATION

124220 1. 124220 H11 DIV 501 01117 DIV 011177 H11 DIV 51

GABOR, M.; DUX, E.; KISS, L.

Antagonism between coagulation inhibitors and vitamin P simulants.  
Acta physiol. hung. 3 no.1:195-198 1952. (CML 24:3)

1. Of the Institute of Pharmacology of Szeged University.

GABOR, M.; HORVATH, B.; KISS, L.; DIRNER, Z.

Prolongation of the effect of adrenalin on isolated organs and in vivo by members of the hematoxylin group. Acta physiol. hung. 3 no.3-4: 585-590 1952. (CLML 24:5)

1. Of the Institute of Pharmacology of Szeged University.



KISS, L.

Action of a new synthetic chromone preparation on the  
poisoned frog heart. M. Kiss and L. Kiss (Budapest Univ.,  
Hungary). *Acta Physiol. Acad. Sci. Hung.* 9, 205-12 (1954)  
(in German); cf. *C.A.* 48, 2903g. — 2-Methyl-5,8-dimethoxy-  
chromone (I) poisoned a normal heart at a concn. of 1:1000.  
A concn. of 1:10 (100) did not affect normal hearts, but  
stimulated frog hearts depressed by urethane, alc.,  $\text{CHCl}_3$ ,  
lactic acid, quinine, Ca-deficiency, or by fatigue. S. K.

GABOR, Miklos; HORVATH, Bertalan; KISS, Lajos

Study on the relationship of cardiac effect and chemical structure.  
Kiserletes orvostud. 8 no.2:113-120 March 56.

1. Szegedi Orvostudományi Egyetem Gyógyszertani és Kóreltani  
Intézete.

(HEART, eff. of drugs on  
pyrone ring containing cpds., relation of cardiac  
eff. to chem. structure. (Hun))

KISS, Lajos

Tuberculous allergy. Tuberkulózis 10 no.5-6:97-101 May-June 57.

1. A XXI. kerületi (csepeli) tudobeteggondoso: Szakkay Antal  
vesetoorvos: Kiss Lajos dr.)

(TUBERCULOSIS, immunol.

allergy. immun. & sensitisation mechanisms (Hung))

JAVOR, Tibor; KISS, Lajos; NAGY, Gyorgy

A surgical method for the production of internal biliary fistulae in dogs. Kiserletes orvostud. 13 no.3:225-227 Jo '61.

1. Debreceni Orvostudományi Egyetem II. Belgyógyászati Klinikája és Igasszagügyi Orvostani Intézete.

(BILIARY FISTULA exper)

KISS, Lajos, dr., o.v. főorvos

Hirepin therapy of non-hypotonic tuberculous patients with complaints in the sternal region. Tuberkulózis 15 no.5:143-144 My '62.

1. A Budagyongyrei Tüdő- és Szívbeteg Szanatorium (igazgató: Gálóczy Jenő dr.) közleménye.

(TUBERCULOSIS PULMONARY ther)

(CHLORPROMAZINE ther)

(RESERPINE ther)

KISS, Lajos, foelado; MATOS, Koltan, foelado

Newer instructions for railroad parcel transportation. Collected  
kozi 20 no.48:792-793 29 N '64.

1. Ministry of Transportation and Postal Affairs, Budapest.

KISS, Lajos

Possibilities for direct broadcasting from telecommunication satellites. Hir techn 16 no.2:56-60 P '65.

1. Experimental Institute of the Hungarian Post, Budapest.

1. Title, infoz, travelog, reports, etc., documents

Temperature and deformation measurement during welding. Dep  
16 no.9:339-344 1964

1. Chair of Mechanical Technology, Leningrad University of  
Heavy Industry, Leningrad.



KISS, Lajos

It should be modernized. Magyar vasut 7 no. 17; 2 2 3 '63.

KISS, Lajos (Alsoors)

Hard-working locomotive engineers. Nagy vasut 8 no.10:1  
16 My '64.

KISS, Lajos

Change in upper leather assortment and its effect on the  
use of materials. Bor cipo 14 no. 2:50-53 Mr '64.

1. Ministry of Light Industry, Budapest.

KISS, László

Importance of raw material supplies from the viewpoint of  
economical production in the food industry. Elelm ipar 13  
no.9:297-300 S '59.

1. Országos Tervhivatal.

KISS, László, dr.

International cooperation of railways in the field of documentation and scientific information. Kozl tud sz 13  
no.11:504-513 N°63

1. Vasuti Tudomayos Kutato Intezet osztalyvezetoje.

KISS, Laszlo

Examination of electrode processes occurring during the dissolution of chromium in sulfuric acid. Magyar kem folyoir 65 no. 11:431-436 N '59.

1. Eotvos Lorand Tudományegyetem Fizikai-Kémiai és Radio-logiai Tanszeke, Budapest.

LENGYEL, Sándor, a kémiai tudományok doktora; KISZ, László, a kémiai tudományok kandidátusa

An account of the 14th Conference of the International Committee of Elector-Chemical Thermodynamics and Kinetics. Kem tud kozl MTA 21 no.3:339-341 '64.

1. Department of Physicochemistry and Radiology, Lorand Eotvos University, Budapest. 2. Editorial board member, "A Magyar Tudományos Akadémia Kémiai Tudományok Osztályának Közleményei" (for Lengyel).

KISS, Laszlo, okl. banyamernok

The new Hungarian bill on mining. Bany lap 93 no. 9:630-634 S 60.



KISS, László, dr.

Parliamentary proceedings of the first Hungarian mining law.  
Bany lap 94 no.2:138-139 F '61.

VARGA, Jozsef, okleveles banyamernok, fomernok; BENCZE, Laszlo, okleveles banyamernok; KISS, Laszlo, okleveles banyamernok, fomernok

Technical development of petroleum engineering and the 25-year old Hungarian petroleum industry. Bany lap 96 no.10:717-732 0'63.

1. Orszagos Koolaj - es Gazipari Troszt, Budapest; "Banyaszati Lapok" szerkeszto bizottsagi tagja (for Varga). 2. Orszagos Koolaj - es Gazipari Troszt vezeregazgathelyettese, Budapest (for Bencze). 3. Deldumantuli Koolaj - es Foldgastermelo Valalat, Bazakerettye (for Kiss).

KISS, Laszlo, dr., okleveles banyamernok

Remarks on the reform curricula of the mining sections of the  
Technical University of the Heavy Industry. Bany lap 96  
no.5:349 My '63.

KISS, Laszlo, dr., okleveles bányamérnök

The socialist mining laws. Bány lap 96 no.8:555-559 Ag '63.

1. Országos Bányászati Főfelügyelőség, Budapest.

KISS, Laszlo, dr., okleveles banyamernok

Some chapters from the Hungarian mining law. Bany lap 97  
no. 5: 337-341 My '64.

1. National General Inspectorate of Mining Engineering,  
Budapest.

KISS, Laszlo, dr., okleveles bányamérnök

Some chapters from the Hungarian mining law. Bány lap 97 no.6:  
411-418 Ju '64.

1. National General Inspectorate of Mining Engineering, Budapest.

KISS, László, dr., olleveles bányamérnök

Some chapters from the Hungarian mining law. Bány lap 97 no.7:489-495 JI '64.

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KISS, L.

HUNGARY/Physical Chemistry. Electrochemistry.

H

Abs Jour: Ref Zhur-Khimiya, No 22, 1958, 73402.

Author : Cseh, I.; Balog, J.; Kiss, L.

Inst :

Title : On the Solution of Electrolytic Zinc in Dilute Perchloric Acid.

Orig Pub: Acta phys. et chem. Szeged, 1957, 3, No 1-4, 64-68.

Abstract: The solution rate (SR) of a Zn disc rotating around an axis perpendicular to its plane at the velocity of 350 revolutions per min. in 0.001 to 0.05 n. HClO<sub>4</sub> was studied. The SR of Zn was determined by titration and polarographically. It is shown that the SR depends on the HClO<sub>4</sub> concentration, and that it is constant at a certain HClO<sub>4</sub> concentration (with the exception of the initial

Card : 1/2

KISS, L. ZOLD, E.

The zinc-silver accumulator; a preliminary communication. p. 93.

(Magyar Kemiai Folyoirat. Vol. 63, no. 2/3, Feb./Mar. 1957. Budapest, Hungary)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 10, October 1957. Uncl.

MISS, L.

HUNGARY/Chemical Technology - Chemical Products and Their H-12  
Application, Part 2. - Electrochemical Industries,  
Electroplating, Chemical Sources of Electric Current.

Abs Jour : Ref Zhur - Khimiya, No 14, 1958, 47396

Author : Ernő Zöld, ~~Laszlo Kiss~~

Inst : -

Title : Silver-Zinc Storage Cell.

Orig Pub : Magyar kem. folyoirat, 1957, 63, No 12, 334-338

Abstract : The Ag-Zn storage cell SH-12 is described. Its capacity  
is 12 ampere x hours and its specific energy is 220 watts  
per liter and 90 watts per kg.

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